

### Claims:

1. A method of making a shaped body out of ceramic material, in which a metal oxide powder and a metal powder are stirred in a colloidal sol into slip and that slip is then consolidated in a mould into a green product, especially by freeze-gelling, and finally the green product is sintered in an active atmosphere which enables the metal powder to oxidise, to form the shaped body.
2. The method as claimed in claim 1, wherein the green product is sintered under an oxygen atmosphere.
3. The method as claimed in either of claims 1 or 2, wherein the slip is doped with a reinforcement, especially of ceramic fibres, such as oxide, carbide and/or nitride fibres.
4. The method as claimed in any of claims 1 to 3, wherein the slip is doped with conductive material, especially silicon carbide (SiC).
5. The method as claimed in any of claims 1 to 4, characterised in that the slip is doped in a targeted manner with carbon and/or carbon fibres.
6. The method as claimed in any of claims 1 to 5, wherein a substance which determines the surface characteristics of the later shaped body is infiltrated into the green product, especially silanes, siloxanes, sols, a metal melt, a glass melt and/or a slip.
7. The method as claimed in any of claims 1 to 5, wherein a substance which determines the surface characteristics of the later shaped body is infiltrated into the shaped body, especially silanes, siloxanes, sols, a metal melt, a glass melt and/or a slip, and the shaped body is then fired again.
8. A slip for making a shaped body out of ceramic material, characterised by a mixture of metal oxide powder and metal powder suspended in a colloidal sol.
9. The slip as claimed in claim 8, characterised in that the colloidal sol is a silicon dioxide sol (silica sol), aluminium oxide sol, aluminium hydroxide sol (boehmite) and/or zirconium oxide sol.
10. The slip as claimed in either of claims 8 or 9, characterised in that the sol is a nanosol.

11. The slip as claimed in any of claims 8 to 10, characterised in that the metal oxide powder consists of silicon, aluminium, zircon, titanium, calcium, zirconium, magnesium and/or mullite and/or spinel.

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12. The slip as claimed in any of claims 8 to 11, characterised in that the metal powder consists of a precious, semi-precious or base metal or an alloy of these metals or intermetallic alloys.

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13. A ceramic shaped body produced by reaction-sintering, under an oxidising atmosphere, a green product made from a freeze-gelled slip prepared from a mixture of metal powder and metal oxide powder suspended in a colloidal sol, especially one produced by a method in accordance with any of claims 1 to 6 and/or from a slip in accordance with any of claims 7 to 12.

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14. The use of a ceramic shaped body as claimed in claim 13 in aerospace engineering, microsystems engineering, refractory engineering and/or casting, especially in casting moulds, preferably for high-precision moulding, and/or as a heat exchanger and/or in biotechnology, especially for chromatography.

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15. A composite component from a ceramic shaped body as claimed in claim 13 and a substrate, characterised in that an amount of metal powder is added to the slip for the shaped body which leads to a volume change during sintering, which leads to a press fit between the shaped body and the substrate.

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